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WILLIAM HUGGINS, ESQ., F.R.S., President, in the Chair.

C. J. Lambert, Esq., 1 Crosby Square, E.C., and
Arthur Schuster, Esq., Ph.D., St. John's College, Cambridge;

were balloted for and duly elected Fellows of the Society.

Mr. D. Gill's Expedition to Ascension. Report, November 11, 1877.

We returned from Green Mountain on October 16 and I resumed observations the same evening.

During the past month the weather has been most unfavourable. Had the opposition of *Mars* occurred in October the result would have been complete failure: only one series of morning observations would have been possible, though there were a good many clear evenings. I have chiefly been occupied with the triangulation of the *Mars* stars of comparison; indeed, when they were conveniently situated for observation I have devoted myself exclusively to this work. Three good nights' work will now finish it, and I hope to send a complete copy of the observations by next mail.

Some observations have been made by daylight of the distance and position-angle of the stars α_1 α_2 *Centauri*. The results show a very small increase in the position-angle, and a marked diminution of the distance (viz. from about $2''{\cdot}15$ to $1''{\cdot}75$) as compared with the results previously communicated. It is probable therefore that very soon the distance will be too small for measurement with so small an aperture (4 inches); as it is, observations are only possible in exceptionally favourable circumstances. I delay sending more detailed results till the series is complete.

In the Melbourne Catalogue there is a star, ε *Indi*, having the very remarkable annual proper motion of $4''{\cdot}2$.

As it happens, this star is favourably situated for observation when the *Mars* stars are in the zenith, and when they, for "break-neck" reasons, are almost unobservable. I have therefore measured the distance and position-angle of ε *Indi* relative to five neighbouring surrounding stars, and hope this may serve as the foundation at some future day of a determination of its parallax and proper motion. The distance of *Saturn* from *Mars* was measured on five days, symmetrically disposed with respect to the remarkable conjunction of November 3. The result may afford some interesting data as to the accuracy attainable by means of the heliometer in such measures, and give a determination of the relative positions of these planets which may be of value for future reference.

The proposed observations of *Melpomene* should begin on the 12th inst. (to-morrow), and I trust the weather will suddenly become more favourable.

Mars Bay, Ascension Island,
November 11, 1877.

Remarks accompanying Drawing of Mars. By Geo. D. Hirst, Esq.

As *Mars* during this opposition is not so favourably placed for observation in your latitude as he is here, I venture to forward the enclosed sketch in the hope that it may prove of interest. The drawing has been carefully executed from a fine $10\frac{1}{4}$ in. reflector, and represents very nearly the appearance of the planet at the present time.

Until lately the markings on *Mars* have been very indistinct, or almost invisible. Even on nights of the finest definition they have been too faint to attempt any effort at delineation, but within the last few days whatever it is that has interfered with our view, either in our own atmosphere or that of the planet, has removed, and the features I have endeavoured to depict are very distinct.

379 *George Street, Sydney, N. S. Wales,*
August 24, 1877.

The Physical Condition of Mars. By John Brett, Esq.

The following remarks are founded on a series of telescopic observations of the planet from August 2 to October 8, 1877, made with a 9-inch (With-Browning) reflector at the southern extremity of England near the Lizard signal station. The conditions were favourable, and no good opportunities of observation